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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | Faculty of Mechanical Engineering |
| **GENERAL INFORMATION** |
| Study program  | **Manufacturing & Information Technologies** |
| Study Module (if applicable) | -  |
| Course title | Manufacturing System Design |
| Level of study | ☐Bachelor ×Master’s ☐ Doctoral |
| Type of course | ×Obligatory☐ Elective |
| Semester  | × Autumn ☐Spring |
| Year of study  | First |
| Number of ECTS allocated | 7 |
| Name of lecturer/lecturers | Dr Milos S. Stojkovic, Dr Miodrag Manic, Dr Milan Trifunovic |
| Teaching mode | ×Lectures ×Group tutorials ☐ Individual tutorials☐Laboratory work × Project work ☐ Seminar☐Distance learning ☐ Blended learning × Other Mfg.Sys. Tours |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The purpose of the course is to teach and train students and future engineers to analyse and redesign the existing manufacturing systems aiming improvement of its performance and to design the new towardsdemands of the business system.**The expected outcome:After completing the course and passing the exam, the student should be able to:*1. *Recognize the existing and / or required components and characteristics of a manufacturing system,*
2. *Define procedures for measuring the performance of a manufacturing system and analyse results,*
3. *Design the computer model of a manufacturing system to simulate and analyse its performance,*
4. *Apply the methodsfor manufacturing systemoptimization,*
5. *Understand the role, reasons and conditions for ICT application in integration of a manufacturing system*
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| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| 1. I*ntroduction to the manufacturing systems*
	1. *Definition and structure of manufacturing system*
	2. *Concepts of manufacturing systems (exemplary models of production)*
2. *The elements of manufacturing system (processes, components, design, manufacturing and measuring tol.)*
3. *Preparation of manufacturing, classification and coding,*
4. *Methods of designing manufacturing system,*
5. *Productivity of manufacturing system,*
6. *Quality of manufacturing systems and methodsfor managing and monitoring of manufacturing processes,*
7. *Reactivity of manufacturing system,*
8. *Manufacturing system reconfiguration (flexible and intelligent manufacturing system)*
9. *Costs inmanufacturing system,*
10. *Selection and analysis of the manufacturing system,*
11. *Rump-up the manufacturing system,*
12. *Optimization, rationalization and automation (Lean and agile production)*
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| **LANGUAGE OF INSTRUCTION** |
| ×Serbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)×Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **16** | **Written examination (test)** | **40** |
| **Practical teaching** |  | **Seminar work and presentation (Oral examination)** | **44** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |